

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Group Art Unit: 3682
Hiroyuki SHIRIIKE, et al.	)	Examiner: Vicky A. Johnson
Serial No. 10/813,000	)	Confirmation No. 5222
Filed: March 31, 2004	)	
For: FRICTIONAL FORCED POWER	)	Date: December 7, 2006
TRANSMISSION BELT AND BELT	)	
DRIVE SYSTEM WITH THE SAME	)	

**REQUEST FOR RECONSIDERATION**

Mail Stop AMENDMENT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action mailed September 7, 2006, Applicants respectfully request reconsideration and allowance of the application in view of the following remarks.

Claims 1-7 are pending in this application, of which claims 1 and 7 are independent.

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yarnell et al. (US 5,610,217) in view of Uchiyama et al. (US 5,188,882). In particular, the Examiner asserts that Yarnell discloses a frictional forced power transmission belt wherein at least a contact part of the belt body with a pulley is formed of a rubber composition containing ethylene-.alpha.-olefin elastomer (col. 2 lines 41-47), but admits that Yarnell fails to teach that the rubber composition also contains a powdery or granular polyolefin resin, as is required by the claims. Thus, the Examiner asserts that Uchiyama teaches the use of a rubber composition containing ethylene-.alpha.-olefin elastomer and also containing a powdery or granular polyolefin resin (col. 6 lines 56-66), and that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the belt body rubber composition of Yarnell to include a powdery or granular polyolefin resin as taught by Uchiyama in order to increase damage resistance (col. 2 lines 1-3).

However, as was discussed with the Examiner during the telephone interview of November 17, 2006, neither Yarnell nor Uchiyama, alone or in combination, disclose, suggest, or render obvious the claimed invention. For example, independent claim 1 recites, in relevant part, that “at least a contact part of the belt body with a pulley is formed of a rubber composition in which powdery or granular polyolefin resin is contained in ethylene- $\alpha$ -olefin elastomer.” In addition, independent claim 7 recites, in relevant part, that “at least a contact part of the belt body of the frictional forced power transmission belt with the pulley is formed of a rubber composition in which powdery or granular polyolefin resin is contained in ethylene- $\alpha$ -olefin elastomer.”

Uchiyama generally discloses the use of polyolefin resins as they are used in multilayered moldings. However, as was presented to the Examiner, Uchiyama fails to specifically disclose the use of powdery or granular resins, as is required by the claims. The use of powdery or granular resins, in combination with ethylene- $\alpha$ -olefin elastomers, result in distinct and unexpected advantages over the use of polyolefin resins generally that would not have been obvious to, or appreciated by, a person of ordinary skill in the art at the time of the invention.

For example, according to the present invention, the rubber component of the rubber composition forming at least the contact part of the belt body with a pulley is an ethylene- $\alpha$ -olefin elastomer. This rubber component itself has a low coefficient of friction. In addition, powdery or granular polyolefin resin is dispersed in the belt body, and the powdery or granular polyolefin resin exposed at the belt surface reduces the coefficient of friction. Thus, a frictional forced powder transmission belt of the invention has a power transmission capacity, as well as an excellent noise reduction performance and abrasion resistance. In addition, since ethylene- $\alpha$ -olefin elastomers have a high affinity to polyolefin resin, excellent dispersing conditions of polyolefin resin into the belt body can be achieved.

In contrast, Uchiyama discloses, in Col. 7, lines 15-18, that “polyolefin resin, in particular, polypropylene is preferably to be used. A mixed compound of this polypropylene and the above-described thermoplastic elastomer can be used.” If a person of ordinary skill in the art were to simply form a “mixed compound” of an ethylene- $\alpha$ -olefin elastomer and a polyolefin resin as is taught by Uchiyama, and use the resulting compound in a frictional forced power

transmission belt, the coefficient of friction would become uniform on the belt surface. As a result, it would be impossible to achieve power transmission capacity, noise reduction performance, and abrasion resistance simultaneously. Thus, even if a person of ordinary skill in the art were to combine the teachings of Yarnell and Uchiyama as is suggested by the Examiner, the advantages of the invention would not be achieved.

Therefore, for at least the above reasons, neither Yarnell nor Uchiyama, alone or in combination, disclose, suggest, or render obvious the claimed invention. Accordingly, the rejection of claims 1-7 under 35 U.S.C. § 103(a) as being unpatentable over Yarnell in view of Uchiyama should be reconsidered and withdrawn.

In view of the foregoing, it is submitted that the present application is in condition for allowance and a notice to that effect is respectfully requested. If, however, the Examiner deems that any issue remains after considering this response, the Examiner is invited to contact the undersigned attorney to expedite the prosecution and engage in a joint effort to work out a mutually satisfactory solution.

**Except** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 19-2380. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

Date: December 7, 2006

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